

EVALUATION OF THE FREQUENCY OF CONSUMPTION OF FOODS CONTAINING GENOTOXIC COMPOUNDS IN A COHORT OF MEXICAN PREGNANT WOMEN

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Background and Aims

Prenatal exposure to polycyclic aromatic hydrocarbons (PAHs) and heterocyclic aromatic amines (HCAs) are associated with increased risk for adverse birth outcomes. In addition to air pollution, foods may contribute to PAH/HCA exposures, which form depending on cooking methods. To evaluate the contribution of ambient pollution exposures to pregnancy outcomes, we are following a cohort of low-socioeconomic status pregnant women in Mexico City. The aim of this preliminary study was to assess the frequency of dietary PAH/HCA intake and consumption habits in our cohort.

Methods

A food frequency test and a 24-hour dietary recall were applied to participants at different times during prenatal follow-up. This questionnaire includes foods with a high content of PAHs/HCA. Additionally, we are collecting information on participants' air pollutant exposure, medical, obstetrical and nutritional variables.

Results

Data from 300 women were analyzed. Total energy intake was 1954 ± 421.9 (mean \pm SD) calories per day. Dietary distribution of macronutrients was 15.4% proteins, 54.7% carbohydrates and 29.6% lipids. Homemade breaded fried chicken, deep-fried tacos and cooked pork skin were an important source of PAHs/HCA. Other foods such as grilled tomato sauce, toasted bread, grilled cactus and toasted tortilla were also consumed on daily basis. Women consumed more dietary PAH/HCA from cooked cereals and vegetables than from meat sources.

Conclusions

Main foods contributing to PAH/HCA intake in a Mexican urban pregnant population were identified. This pattern of consumption reflects the frequent intake of low-cost homemade foods with high PAH/HCA content. No quantitative studies of PAHs/HCA are available for Mexican foods. Future plans include determining the relative contributions of dietary PAHs/HCA, air pollution, and tobacco smoke exposures to DNA damage during pregnancy by correlating these exposures to PAH/HCA DNA adducts in mother's and umbilical cord blood. We will also evaluate associations between DNA damage and pregnancy outcomes.